

## North Dakota Soil Nutrient Loss Potential Management Considerations

### GENERAL MANAGEMENT STATEMENTS\*

Soil testing should be completed at least every other year to monitor nitrogen and at least once every five years to monitor phosphorus levels. Soil samples should be taken to the rooting depth of each crop in the rotation to reduce the risk of leaching nitrate nitrogen out of the root zone.

Fall application of anhydrous ammonia and urea should be delayed until soil temperature is less than 45 degrees Fahrenheit. When soil temperatures are above 45 degrees Fahrenheit, microbial activity increases, converting ammonia to nitrate-nitrogen (NO<sub>3</sub>). Nitrate-nitrogen is a very mobile form of nitrogen and can leach below the crop root zone.

Nutrient application should avoid areas sensitive to surface and ground water contamination. Follow federal, state and local guidelines for specific setbacks need to minimize impacts to

### Ground Water Protection

#### WETNESS

Not Rated <i>Commercial Fertilizer and/or Ag Wastes</i>	MODERATE POTENTIAL <i>Commercial Fertilizer and/or Ag Wastes</i>	HIGH POTENTIAL <i>Commercial Fertilizer and/or Ag Wastes</i>
*See above statements	*See above statements	*See above statements plus Fall application not recommended. Spring application should be delayed until after the soil has completely thawed. Consider split nitrogen applications to include a preplant application and a later application during early vegetative growth.
Maximum accumulation of N 180 lbs./ac Maximum accumulation of P 150 ppm	Maximum accumulation of N 150 lbs./ac Maximum accumulation of P 125 ppm	Maximum accumulation of N 100 lbs./ac Maximum accumulation of P 100 ppm

#### POOR FILTER

Not Rated <i>Commercial Fertilizer and/or Ag Wastes</i>		HIGH POTENTIAL <i>Commercial Fertilizer and/or Ag Wastes</i>
*See above statements	<i>Not applicable</i>	*See above statements plus Fall application not recommended. Spring application should be delayed until after the soil has completely thawed. Consider split nitrogen applications to include a preplant application and a later application during early vegetative growth.
Maximum accumulation of N 180 lbs./ac Maximum accumulation of P 150 ppm		Maximum accumulation of N 100 lbs./ac Maximum accumulation of P 100 ppm

#### LATERAL FLOW

Not Rated <i>Commercial Fertilizer and/or Ag Wastes</i>	MODERATE POTENTIAL <i>Commercial Fertilizer and/or Ag Wastes</i>	
*See above statements	*See above statements plus Consider split nitrogen applications to include a preplant application and a later application during early vegetative growth.	<i>Not applicable</i>
Maximum accumulation of N 180 lbs./ac Maximum accumulation of P 150 ppm	Maximum accumulation of N 150 lbs./ac Maximum accumulation of P 125 ppm	

## SURFACE WATER PROTECTION

### RUNOFF

<b>NOT RATED</b> <b>Commercial Fertilizer and/or Ag Wastes</b>  *See above statements  Maximum accumulation of N 180 lbs./ac Maximum accumulation of P 150 ppm	<b>MODERATE POTENTIAL</b> <b>Commercial Fertilizer and/or Ag Wastes</b> *See above statements plus  Fall application is not recommended if residue cover is less than 30%. Spring incorporation is necessary (within 1 day) if residue cover will be less than 30% after application. Maximum accumulation of N 150 lbs./ac Maximum accumulation of P 125 ppm	<b>HIGH POTENTIAL</b> <b>Commercial Fertilizer and/or Ag Wastes</b> *See above statements plus  Fall application is not recommended if residue cover is less than 40%. Spring incorporation is necessary (within 1 day) if residue cover will be less than 40% after application. Maximum accumulation of N 100 lbs./ac Maximum accumulation of P 100 ppm
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### FLOODING

<b>Not Rated</b> <b>Commercial Fertilizer and/or Ag Wastes</b>  *See above statements  Maximum accumulation of N 180 lbs./ac Maximum accumulation of P 150 ppm	<b>Not applicable</b>	<b>HIGH POTENTIAL</b> <b>Commercial Fertilizer and/or Ag Wastes</b> *See above statements plus Surface application in the fall is not recommended. Incorporation or injection is required. All spring applications should be delayed until after spring runoff and/or flooding. Maximum accumulation of N 100 lbs./ac Maximum accumulation of P 100 ppm
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### SURFACE DRAINAGE

<b>Not Rated</b> <b>Commercial Fertilizer and/or Ag Wastes</b>  *See above statements  Maximum accumulation of N 180 lbs./ac Maximum accumulation of P 150 ppm	<b>MODERATE POTENTIAL</b> <b>Commercial Fertilizer and/or Ag Wastes</b> *See above statements plus Adequate cover is required to prevent soil movement into surface drains by wind and/or water erosion. Maximum accumulation of N 150 lbs./ac Maximum accumulation of P 125 ppm	<b>Not applicable</b>
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